# ARC 7839B

## PUBLIC HEALTH DEPARTMENT[641]

**Adopted and Filed**

Pursuant to the authority of Iowa Code section 135I.4, the Iowa Department of Public Health hereby amends Chapter 15, "Swimming Pools and Spas," Iowa Administrative Code.

Federal legislation entitled "The Virginia Graeme Baker Pool and Spa Safety Act" (VGB) (H.R. 6, 303-309, Title XIV) was signed into law on December 19, 2007. The legislation requires that the main drains and other outlets of public swimming pools and spas be modified within one year to prevent entrapment incidents. Iowa's rules relating to swimming pools and spas are amended to include the requirements of VGB to enable the Department and its local contractors to enforce the provisions of VGB.

Notice of Intended Action was published in the April 8, 2009, Iowa Administrative Bulletin as **ARC 7675B**. A public hearing was held on April 28, 2009. No comments were received. Since the Notice was published, changes were made to 15.4(4)"h"(1) and 15.51(4)"f"(2) to make additional cover/grates available for retrofits. Changes were also made to 15.4(4)"h"(3), 15.4(6)"f," 15.51(4)"f"(4), and 15.51(5)"e" to require that safety vacuum release systems (SVRS) be installed according to manufacturer's instructions and be tested at least monthly for proper function, and to require that the results of the testing be recorded.

These amendments were adopted by the State Board of Health on May 13, 2009.

These amendments will become effective July 8, 2009.

These amendments are intended to implement Iowa Code chapter 135I.

The following amendments are adopted.

ITEM 1. Amend subrule **15.3(1)**, definition of "Equalizer," as follows:

*"Equalizer"* means an arrangement including a pipe from an opening below the water level in a swimming pool or spa to the body of a skimmer and a normally closed valve at the skimmer body. The arrangement is designed to automatically prevent air from being drawn into the pump when the water level drops below the skimmer inlet. The equalizer opening in a swimming pool or spa is a fully submerged outlet.

ITEM 2. Adopt the following **new** definitions of "Field fabricated," "Flow rating," "Fully submerged outlet," "Outlet system" and "Unblockable" in subrule **15.3(1)**:

*"Field fabricated,"* when applied to a sump or a cover/grate for a fully submerged outlet, means constructed on site with conventional building materials or of a size and shape different from readily available commercial sumps or cover/grates.

*"Flow rating,"* when applied to the cover/grate for a fully submerged outlet, means the maximum flow rate in gpm through the cover/grate that will not cause body or hair entrapment as determined by the test methods in the ASME standard.

*"Fully submerged outlet"* means an outlet that is completely under water when the water is at the normal operating level.

*"Outlet system"* means an arrangement of components associated with one or more connected fully submerged outlets including the cover/grate(s), the sump(s), the piping, and the pump(s) if one or more pumps are directly connected to the outlet(s).

*"Unblockable,"* when applied to a cover/grate for a fully submerged outlet, means a size and shape that cannot be fully covered by an 18-inch by 23-inch mat with 4-inch-diameter rounded corners and the differential pressure generated by the flow through the uncovered open area is not enough to cause body entrapment. "Unblockable" is evaluated by the methods specified in the ASME standard.

ITEM 3. Adopt the following **new** abbreviation in subrule **15.3(2)**:

*"ASME standard"* means ASME/ANSI A112.19.8a-2008, "Suction Fittings for Use in Swimming Pools, Wading Pools, Spas, and Hot Tubs." The standard sets performance requirements and test methods for pool and spa fittings, covers and grates for physical strength, ultraviolet light resistance, and hair and

body entrapment prevention. The standard can be purchased from ANSI by calling (212)642-4980 or at http://webstore.ansi.org/.

ITEM 4. Rescind paragraph **15.4(4)"h"** and adopt the following **new** paragraph in lieu thereof:

*h. Fully submerged outlets.* Each outlet, including the main drain(s), shall be designed to prevent user entrapment. A swimming pool shall be closed if the cover/grate of a fully submerged outlet is missing or broken.

(1) Each fully submerged outlet shall have a cover/grate that has been tested for compliance with the requirements of the ASME standard by a testing agency approved by the department or that is certified for compliance by an engineer licensed in Iowa.

1. The cover/grate for an outlet system with a single fully submerged outlet shall have a flow rating of at least 100 percent of the maximum system flow rate. The combined flow rating for the cover/grates for an outlet system with more than one fully submerged outlet shall be at least 200 percent of the maximum system flow rate.

The maximum system flow rate for a main drain system is at least the design filter flow rate, but may include play feature and water slide flow. The maximum system flow rate for other fully submerged outlets is the design flow rate of the pump(s) directly connected to the outlet system.

2. Fully submerged outlet cover/grates shall not be removable without the use of tools.

3. Purchase records and product information that demonstrate compliance shall be maintained by the facility for at least five years from the time the cover/grate is purchased. If a field fabricated cover/grate is certified for compliance to the ASME standard by an engineer licensed in Iowa, a copy of the certification letter shall be kept at the facility for at least five years from the certification date.

(2) A swimming pool with a single fully submerged outlet that is not unblockable and that is directly connected to a pump shall be closed if the outlet does not have a cover/grate that complies with the ASME standard.

If a swimming pool has two or more fully submerged outlets on a single surface that are all less than 3 ft apart on center, are not unblockable, and are directly connected to a pump, the swimming pool is considered to have a single fully submerged outlet.

(3) A swimming pool with a single fully submerged outlet that is not unblockable and that is directly connected to a pump shall be closed if the outlet system is not equipped with a safety vacuum release system that is listed for compliance with ASME/ANSI A112.19.17-2002, "Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems," by a listing agency approved by the department; or another vacuum release system approved by the department.

1. Purchase records and product information that demonstrate compliance shall be maintained by the facility for at least five years from the time the SVRS is purchased or another approved system is installed.

2. An SVRS shall be installed in accordance with the manufacturer's instructions.

3. An SVRS shall be tested for proper function at the frequency recommended by the manufacturer, but at least once in each month the swimming pool is operated. The date and result of each test shall be recorded.

(4) In lieu of compliance with subparagraphs (1), (2) and (3) above, a fully submerged outlet in a swimming pool may be disabled with the approval of the department, except that an equalizer in a skimmer may be plugged without department approval. The management of the swimming pool shall submit to the department information including, but not necessarily limited to:

1. The area and volume of the pool;

2. The functional areas of the pool and the depths in those areas;

3. Detailed information about the inlet system, including the location of the inlets, the depth of the inlets, and the type of inlet fitting;

4. Detailed information about the overflow system, gutter or skimmer, number of skimmers, and pipe sizes;

5. Pump information and flow rates for the outlet system;

6. Filter type, number of filters, the size of the filter(s), and whether multiple filters are backwashed together or separately.

If the department approves the application to disable the outlet, the outlet valve shall be closed and the valve secured by removing the handle, by locking the handle closed, or by another method approved by the department. The outlet may be physically disconnected from the pump system at the option of the facility management.

ITEM 5. Adopt the following **new** subparagraph **15.4(6)"f"(8)**:

(8) If applicable, dates and results of tests of each SVRS installed at a facility.

ITEM 6. Amend paragraph **15.5(7)"d"** as follows:

*d. Main drain piping.* ~~The~~ If the main drains are connected to the recirculation system, the main drains and main drain piping shall be designed to convey at least 100 percent of the recirculation flow rate.

ITEM 7. Amend subparagraph **15.5(9)"a"(6)** as follows:

(6) If a swimming pool is not equipped with an automatic water level maintenance device, each skimmer that is a suction outlet shall have an operational equalizer. The equalizer opening in the swimming pool shall be covered with a fitting listed by a listing agency approved by the department as meeting the requirements of ~~ANSI/ASME A112.19.8M-1987~~ the ASME standard.

ITEM 8. Rescind subrule 15.5(10) and adopt the following **new** subrule in lieu thereof:

**15.5(10)** *Main drain system.*

*a. Main drains.* Each swimming pool shall have a convenient means of draining the water from the pool for winterization and service.

*b. Main drains for recirculation.* If the main drain system is connected to the recirculation system, there shall be two or more main drains or a single main drain that is unblockable.

(1) Two main drains shall be at least 3 ft apart on center. If three or more main drains are installed, the distance between the drains farthest apart shall be at least 3 ft on center.

(2) Each main drain and its associated piping in a swimming pool shall be designed for the same flow rate. Multiple drains shall be plumbed in parallel, and the piping system shall be designed to equalize flow among the main drains.

(3) If one or two main drains are installed, each main drain cover/grate, sump and the associated piping shall be designed for at least 100 percent of the recirculation flow rate specified by 15.5(5)*"b."* If three or more main drains are installed, the combined flow rating of the cover/grates, the sumps and the associated piping shall be at least 200 percent of the recirculation flow rate. If water for water slides, fountains and play features is circulated through the main drain and overflow systems, the main drains shall be designed for the combined feature and recirculation flow.

(4) Manufactured main drain sumps shall be listed by a listing agency acceptable to the department for compliance with the ASME standard. Field fabricated sumps shall be designed in accordance with the ASME standard and shall be certified by an engineer licensed in Iowa.

(5) There shall be a control valve to adjust the flow between the main drain and the overflow system.

(6) Main drain covers. Each main drain shall be covered with a cover/grate that complies with the ASME standard.

1. The flow rating for each cover/grate shall comply with 15.5(10)*"b"*(3).

2. The mark of a listing agency acceptable to the department shall be permanently marked on the top surface of each manufactured cover/grate.

3. Field fabricated cover/grates shall be certified for compliance to the ASME standard by a professional engineer licensed in Iowa. A certificate of compliance shall be provided to the swimming pool owner and to the department.

4. The main drain cover/grate shall be designed to be securely fastened to the pool so that the cover/grate is not removable without tools.

*c. Feature outlets.* Where fully submerged outlets for play or decorative features or water slides are in the swimming pool, the outlets shall be designed in accordance with 15.5(10)*"b."*

ITEM 9. Rescind paragraph **15.5(14)"c."**

ITEM 10. Reletter paragraph **15.5(14)"d"** as **15.5(14)"c."**

ITEM 11. Amend paragraph **15.5(15)"f"** as follows:

*f. Main drains.* ~~A~~ The main drain system shall ~~be provided which complies~~ comply with the requirements of 15.5(10).

ITEM 12. Amend paragraph **15.5(17)"h"** as follows:

*h. Suction outlets.* If a fully submerged suction outlet is in a plunge pool or in a swimming pool, it shall be located away from normal water slide user traffic areas. ~~One of the following designs shall be used:~~ The suction outlet system shall be designed in accordance with 15.5(10)*"b."*

~~(1) Multiple outlets may be used. Outlets shall be at least 3 ft apart. The outlets shall be covered with grates or other protective covers approved by the department. Water velocity through the outlet covers shall not exceed 1½ ft/sec.~~

~~(2) The outlet shall have an area of at least 324 in$^2$. The outlet shall be covered by a grate or other protective cover approved by the department. Water velocity through the outlet cover shall not exceed 1½ ft/sec.~~

ITEM 13. Rescind and reserve paragraph **15.5(17)"i."**

ITEM 14. Amend paragraph **15.5(19)"d"** as follows:

*d.* Spray pad drains shall be gravity outlets. At least two drains shall be provided, or a single drain ~~with an area of at least 324 in$^2$~~ that is unblockable shall be provided. ~~The drain cover shall meet the requirements for a main drain cover in 15.5(10)*"b."*~~

(1) The drain system and associated piping shall be designed for 125 percent of the flow into the spray pad (play feature and recirculation, as applicable).

(2) Each drain cover/grate shall be flush with the spray pad surface and shall have no opening wider than ½ inch.

(3) Each drain cover/grate shall be designed to be securely fastened to the spray pad so that the drain cover/grate is not removable without tools.

(4) Drain cover/grates that are exposed to foot traffic shall:

1. Have a slip-resistant surface; and

2. Support a 300-pound concentrated load when tested in accordance with the ASME standard, Section 3.3. Structural strength shall be verified by documentation of test results from a testing agency approved by the department or by certification by an engineer licensed in Iowa; and

3. If the drain cover is exposed to sunlight, be resistant to ultraviolet light (UV) in accordance with the ASME standard, Section 3.2.2. UV resistance shall be verified by documentation of test results from a testing agency approved by the department or by certification by an engineer licensed in Iowa.

ITEM 15. Amend paragraph **15.5(20)"g"** as follows:

*g.* Outlets for the leisure river propulsion system shall be designed ~~as main drains as specified~~ in ~~15.5(10).~~ accordance with 15.5(10)*"b."*

ITEM 16. Rescind paragraph **15.51(4)"f"** and adopt the following **new** paragraph in lieu thereof:

*f.* Fully submerged outlets. Each fully submerged outlet shall be designed to prevent user entrapment. A spa shall be closed if the cover/grate of a fully submerged outlet is missing or broken.

(1) For a spa constructed prior to May 13, 1998, each pump that draws water directly from a fully submerged outlet shall be connected to two or more outlets or a single outlet with an area of at least 144 in$^2$.

(2) Each fully submerged outlet shall have a cover/grate that has been tested for compliance with the requirements of the ASME standard by a testing agency approved by the department or that is certified for compliance by an engineer licensed in Iowa.

1. The cover/grate for an outlet system with a single fully submerged outlet shall have a flow rating of at least 100 percent of the maximum system flow rate. The combined flow rating for the cover/grates

for an outlet system with more than one fully submerged outlet shall be at least 200 percent of the maximum system flow rate.

The maximum system flow rate is the design flow rate for the pump(s) directly connected to the outlet(s) in an outlet system. In the absence of better information, the maximum system flow rate is the capacity of the pump(s) at 50 feet TDH, based on the manufacturer's published pump curves.

2. Fully submerged outlet cover/grates shall not be removable without the use of tools.

3. Purchase records and product information that demonstrate compliance shall be maintained by the facility for at least five years from the time the cover/grate is purchased. If a field fabricated cover/grate is certified for compliance to the ASME standard by an engineer licensed in Iowa, a copy of the certification letter shall be kept at the facility for at least five years from the certification date.

(3) A spa with a single fully submerged outlet that is not unblockable and that is directly connected to a pump shall be closed if the outlet does not have a cover/grate that complies with the ASME standard.

If a spa has two or more fully submerged outlets on a single surface that are all less than 3 ft apart on center, are not unblockable, and are directly connected to a pump, the spa is considered to have a single fully submerged outlet.

(4) A spa with a single fully submerged outlet that is not unblockable and that is directly connected to a pump shall be closed if the outlet system is not equipped with a safety vacuum release system that is listed for compliance with ASME/ANSI A112.19.17-2002, "Manufactured Safety Vacuum Release Systems (SVRS) for Residential and Commercial Swimming Pool, Spa, Hot Tub, and Wading Pool Suction Systems," by a listing agency approved by the department; or another vacuum release system approved by the department.

1. Purchase records and product information that demonstrate compliance shall be maintained by the facility for at least five years from the time the SVRS is purchased or another approved system is installed.

2. An SVRS shall be installed in accordance with the manufacturer's instructions.

3. An SVRS shall be tested for proper function at the frequency recommended by the manufacturer, but at least once in each month the spa is operated. The date and result of each test shall be recorded.

(5) In lieu of compliance with subparagraphs (2), (3) and (4) above, a fully submerged outlet in a spa may be disabled with the approval of the department, except that an equalizer in a skimmer may be plugged without department approval. The management of the spa shall submit to the department information including, but not necessarily limited to:

1. The area and volume of the spa;

2. Detailed information about the inlet system, including the location of the inlets and the type of inlet fitting;

3. The number of skimmers and pipe sizes;

4. Pump information and flow rates for the outlet system; and

5. Filter type, number of filters, the size of the filter(s), and whether multiple filters are backwashed together or separately.

If the department approves the application to disable the outlet, the outlet valve shall be closed and the valve secured by removing the handle, by locking the handle closed, or by another method approved by the department. The outlet may be physically disconnected from the pump system at the option of the facility management.

ITEM 17. Adopt the following **new** subparagraph **15.51(5)"e"(10)**:

(10) If applicable, dates and results of tests of each SVRS installed at a facility.

ITEM 18. Amend paragraph **15.52(9)"e"** as follows:

*e.* Equalizers. If a spa is not equipped with an automatic water level maintenance device, each skimmer shall have an operational equalizer. The equalizer opening in the spa shall be covered with a fitting listed by a listing agency approved by the department as meeting the requirements of ~~ANSI/ASME A112.19.8M-1987~~ the ASME standard.

ITEM 19. Rescind subrule 15.52(10) and adopt the following **new** subrule in lieu thereof:

**15.52(10)** *Main drain system.* Each spa shall have a convenient means of draining the water from the spa for service. Spa main drains may be on the sidewall of a spa near the spa bottom.

*a.* Suction outlets. If a spa pump is directly connected to a main drain or another fully submerged outlet, the pump shall be connected to two or more fully submerged outlets or to a single fully submerged outlet that is unblockable. The recirculation system and the agitation system may use the same fully submerged outlet(s).

(1) Two fully submerged outlets that are directly connected to one or more pumps in the same outlet system shall be at least 3 ft apart on center or on different spa surfaces. If three or more fully submerged outlets that are all directly connected to one or more pumps in the same outlet system are installed, the distance between the outlets farthest apart shall be at least 3 ft on center or the outlets shall be installed on different spa surfaces.

(2) If there is only one fully submerged outlet in an outlet system, the flow rating of the outlet cover/grate, sump and the associated piping shall be at least 100 percent of the maximum system flow rate. If two or more fully submerged outlets are installed in an outlet system, the combined flow rating of the cover/grates, the sumps and the associated piping shall be at least 200 percent of the maximum system flow rate. Multiple outlets in an outlet system shall be plumbed in parallel.

The maximum system flow rate for the recirculation system is the flow rate specified in 15.52(5)*"b"* or the design flow rate, whichever is greater. The maximum system flow rate for the agitation system is the specified design flow rate. If a flow rate is not specified, the maximum system flow rate shall be the flow capacity of the pump(s) at 50 feet TDH, based on the manufacturer's published pump curves.

*b.* Control valve. If a main drain is connected to the recirculation system, there shall be a control valve to adjust the flow between the main drain and the overflow system.

*c.* Main drain covers. Each main drain or other fully submerged outlet shall be covered with a cover/grate that is listed as complying with the requirements of the ASME standard by a listing agency approved by the department. A listed cover/grate shall be used in accordance with its listing.

(1) The flow rating for the cover/grate(s) shall comply with 15.52(10)*"a"*(2).

(2) The mark of a listing agency acceptable to the department shall be permanently marked on the top surface of each manufactured cover/grate.

(3) Field fabricated cover/grates shall be certified for compliance to the ASME standard by a professional engineer licensed in Iowa. A certificate of compliance shall be provided to the spa owner and to the department.

(4) The fully submerged outlet cover/grate shall be designed to be securely fastened to the spa so that the cover/grate is not removable without tools.

*d.* For outlet systems with manufactured sumps, the sumps shall be listed by a listing agency acceptable to the department for compliance with the ASME standard. Field fabricated sumps shall be designed in accordance with the ASME standard and shall be certified by an engineer licensed in Iowa.

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